

**Testimony of Brian J. Hancock, Director, Testing and Certification
EAC Public Meeting May 17 2007**

Summary of EAC Staff Level Meeting on Voting System Testing and Associated Costs

On April 30-May 1 2007, EAC staff convened a meeting in Denver, Colorado to discuss voting system testing and cost factors associated with such testing. Invited participants represented a cross section of interested parties including State election officials, voting system test labs, staff from the EAC, NIST and NVLAP, voting system manufacturers, public interest group representatives from Verified Voting and Vote Trust, state testers and the Technology Division Chief from the Nevada Gaming Commission.

Discussion sessions were led by the individuals from each of the major groups represented and proceeded into a very lively and free-flowing give and take.

State election officials expressed numerous concerns, including the lack of both financial and human resources when conducting State testing. Smaller states were particularly concerned with this ongoing lack of resources. State representatives were also concerned about costs associated with duplicating some of the tests conducted at the National level. California noted that testing costs in the state have increased ten fold since the enactment of HAVA. This cost for California did not include the approximately \$150,000 for doing parallel testing for 2 different voting systems in a handful of counties. This was also prior to the recently enacted top-down review of voting systems ordered by the Secretary of State. When asked if additional funding is the answer to these concerns, State representatives said that funding might help with State level testing, but an even bigger problem was local acceptance testing. At the local level, lack of trained human resources especially in small rural jurisdictions, have forced the election officials to rely on manufacturer assistance when it should clearly not be a factor.

Test laboratory representatives discussed the costs associated with NVLAP review and how they structured their pricing. Both EAC accredited laboratories bill on a time and material basis for the vast majority of testing conducted. Full cost of system testing appears to be dependent on three things:

1. The number of lines of source code to be reviewed;
2. The amount of hardware associated with the system;
3. and the maturity of the system

Costs associated with NVLAP review include a \$4,500 application fee, a \$500 one-time fee and on-site assessment costs of approximately \$15,000 for each two-year reevaluation after their initial accreditation. Ramp up costs for the iBeta staff to meet the requirements of the NVLAP review were noted to be between \$75,000 and \$100,000 and took approximately 1500 staff hours.

Voting system manufacturers noted that the biggest impact on their costs for system testing was when and how often standards or guidelines are updated and the impact of the

new EAC certification program. One manufacturer noted that their cost to test to the 1990 VSS was \$100,000, the cost of testing to the 2002 VSS was over \$200,000 and the costs of testing to the 2005 VVSG were expected to be between \$400,000 and \$800,000. Although none of the manufacturers ventured a guess as to the possible cost of testing to the next iteration of the VVSG, they all agreed that these costs would likely be anywhere from 6 to 10 times the cost of testing to the 2005 VVSG. Several of the manufacturers suggested that a cost benefit analysis be done for each new iteration of the VVSG in order to better identify differences in testing costs from one iteration to the next to more easily define where costs savings might be realized.

One manufacturer also discussed State testing costs, noting that they divide states into 3 categories; those in which state testing costs between \$100,000 and \$500,000, those that cost over \$5,000 but less than \$100,000, and those that cost less than \$5,000.

Representatives from the Voter interest groups noted that transparency of the process was the most important aspect from their point of view. Both representatives thought that the new EAC program generally addresses their transparency concerns, and acknowledged that a balance did need to be found between the need for increased security of voting machines and the costs of making them secure.

State certification experts noted that the purpose of State certification testing was simply to make sure that the system is suitable for use in the particular State, and that a specific state election can be run on the voting system. They also noted that local acceptance testing should be properly funded, resourced, and made as simple and as affordable as possible. They also agreed that when a voting system received Federal certification, States should have confidence that the only additional thing they need to test is whether the system will function as required within the individual states.

Our guest speaker from the Nevada gaming Commission spoke about the similarities between certification in elections and the gaming industry, but was quick to point out that he was not trying to equate gambling with voting, only that both industries had similarities in terms of fundamental goals and objectives, issues and challenges of regulating an industry and testing and compliance. He noted that stakes were high in both areas regarding trust and confidence, the proper implementation of innovation, and the proper implementation of security. As background he noted that:

- Revenues collected by the Gaming Commission generate 32% of the budget for the State of Nevada.
- The Gaming Commission was responsible for the continuing certification of 215,000 slot machines, and other gaming devices from 12 major manufacturers and hundreds of smaller manufacturers.
- The Gaming Commission was responsible for over 2,400 casino operators and /or locations.

It was stated that the Gaming Commission is a part time board making final approval on all gaming matters with a full time staff of 405 individuals, including 60 in the Technology and Testing branch, 120 auditors, and 60 investigators. The Commission has found from 50 years of experience that new system approval takes between 6 and 18

months depending upon individual circumstances with a fixed testing cost of \$150 per hour. To make it all work the Gaming Commission notes that no one aspect of oversight is enough. They must rely on compliance with technical standards, examination of people and organizations, continue to verify people, organizations and systems, and continually examine the physical security component of all systems.

In conclusion, the meeting produced several recurring themes that participants suggested for future EAC action. These include:

1. The development of a matrix comparing the requirements of Federal certification testing to the requirements in each of the States for State certification testing. This would assist in eliminating unnecessary overlapping of testing in many instances.
2. Additional formal cooperation between States and the EAC to explore specific ways to reduce duplication in testing and push as much testing up to the Federal level as possible, specifically the expensive volume testing.
3. EAC should facilitate information sharing with and among the States regarding testing of voting systems.
4. EAC should document best practices in State and local acceptance testing, translate the best practices in a scalable way so that they can be used by all jurisdictions, and share this information.
5. Provide the manufacturers a seat at the table when standards and guidelines are being developed as is done in all other industries, and
6. Provide and estimated implementation cost with each new iteration of the VVSG.